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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/029,944

12/31/2001

Jung-Im Kim

P67496US0

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7590

08/16/2004

JACOBSON HOLMAN PLLC
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WASHINGTON, DC 20004

EXAMINER

TORRES, JOSEPH D

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,944

Applicant(s)

KIM ET AL.

Examiner

Joseph D. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) *
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/13/02, 01/22/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: '100' in Figure 1 and '210' in Figure 2. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4-6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Tong; Wen et al. (US 6744744 B1, hereafter referred to as Tong).

35 U.S.C. 102(e) rejection of claims 1 and 6.

Tong teaches a turbo code encoder (Figure 5 in Tong teaches a turbo code encoder) comprising: a first convolutional encoder for receiving bits to be encoded (Encoder 1 in Figure 5 of Tong is a first convolutional encoder for receiving bits to be encoded), generating a systematic bit and a first parity bit, and outputting them (Encoder 1 in Figure 5 of Tong generates a systematic bit S and a first parity bit P1 and outputs them to channel interleavers); an interleaver for receiving the bits to be encoded, in parallel with the first convolutional encoder, and interleaving the received bits (Interleaver 91 in Figure 5 of Tong is an interleaver for receiving the bits to be encoded, in parallel with the first convolutional Encoder 1 in Figure 5, and interleaving the received bits); a second convolutional encoder for receiving the interleaved bits from the interleaver and generating a second parity bit (Encoder 2 in Figure 5 of Tong is a second convolutional encoder for receiving the interleaved bits from Interleaver 91 and generating a second parity bit P2); and a repeater for repeatedly outputting predefined bits among the bits output from the first and second convolution encoders (Repetition Encoder 96 in Figure 5 of Tong is a repeater for repeatedly outputting predefined bits among the bits output from the first and second convolution Encoders 1 and 2 in Figure 5).

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35 U.S.C. 102(e) rejection of claims 2, 4, 5, 8.

Col. 10, lines 44-51 and Figure 5 in Tong teach that the Repetition Encoder 96 in Figure 5 can selectively repeat systematic bits and/or parity bits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 3, 7 and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Tong; Wen et al. (US 6744744 B1, hereafter referred to as Tong).

35 U.S.C. 103(a) rejection of claims 3, 7 and 9.

Tong substantially teaches the claimed invention described in claims 1, 2, 4-6 and 8 (as rejected above).

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However Tong does not explicitly teach the specific use of particular puncturing or repetition patterns.

The Examiner asserts that Tong teaches a means for selectively puncturing or repeating turbo coded bits, which encompasses any particular embodiment of the teachings in the Tong patent for creating a particular puncturing or repetition patterns. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Tong by including use of particular puncturing or repetition patterns. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of particular puncturing or repetition patterns would have provided the opportunity to ensure a properly rate matched turbo code.

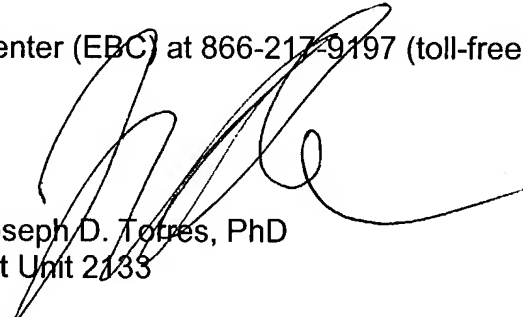
Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yun Hee Kim; Milstein, L.B.; Song, I.; **Performance of a turbo coded multicarrier DS/CDMA system with nonuniform repetition coding**, IEEE Journal on Selected Areas in Communications, Volume: 19 , Issue: 9 , Sept. 2001, Pages:1764 – 1774.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Totres, PhD
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